20IT3501-COMPUTER NETWORKS

Course Category:	Programme core	**Credits:**	3
Course Type:	Theory	**Lecture-Tutorial-Practice:**	2-0-2
Prerequisites:	---	**Continuous Evaluation:**	30
		Semester end Evaluation:	70
		Total Marks:	100

Course Outcomes	Upon successful completion of the course, the student will be able to:	
	CO1	Understand the functioning of the network components in wired and wireless communication
	CO2	Apply error detection, correction and security methods in a network
	CO3	Analyze different protocols functioning at Application layer, Transport layer and Network layer.
	CO4	Evaluate the shortest path in data transfer with Routing algorithms

Contribution of Course Outcomes towards achievement of Program Outcomes (L-Low, Medium-M, H-High)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1														
CO2	3	2	1										2	1
CO3		3			1								2	
CO4	2	1	3										3	

Course Content

UNIT I:
Introduction: Uses of Computer Networks, Network Hardware, LANs, MANs, WANs, Network Software. The Network core
Reference Models: The OSI Reference Model, TCP/IP Reference Model, the comparison of OSI, and TCP/IP reference models

UNIT II:
Application Layer: Principles of network applications, The Web and HTTP, FTP, E-Mail in the internet, DNS-The internet's directory service.
Transport Layer: Connectionless Transport: UDP, Connection-Oriented Transport: TCP, Principles of congestion control, TCP Congestion Control.

UNIT III:
The Network Layer: Introduction, Virtual circuits and Datagram Networks, The Internet Protocol(IP), Routing Algorithms
Case studies-Distance Vector, Link State algorithms
The Link Layer and Local Area Networks :Introduction and services, Error Detection and Correction Techniques,Switched Local Area Networks

UNIT IV:
Wireless and Mobile Networks: Introduction, Wireless links and Network characteristics, Wi-fi, Mobile IP
Network Security: Cryptography, Symmetric-key algorithms-DES, AES, Public-key algorithms- RSA, Firewalls.